Facts about *Caulerpa taxifolia*

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The problem: *Caulerpa taxifolia* is an extremely invasive saltwater alga that threatens the marine ecosystems of the Pacific Coastline of North America.

Effects on local biodiversity: Plant and animal species biodiversity and abundance is reduced where *C. taxifolia* has invaded. In nonnative areas, *C. taxifolia* displaces the natural vegetation, and becomes the dominant plant life.

Growth: *C. taxifolia* has the ability to form a dense smothering blanket on any surface including rock, sand, or mud, thus wiping out other present plants. It is capable of extremely rapid growth of approximately one inch per day.

Depth: *C. taxifolia* can grow in shallow coastal lagoons as well as in deeper ocean waters to depths of greater than 300 feet (nearly 100 m).

Natural control: There is no known aquatic life that eats *Caulerpa taxifolia* except in areas of the tropics where it is naturally found. *C. taxifolia* secretes a toxin that is avoided by molluscs, herbivorous fish, and sea urchins.

Spread: The most likely origin of *Caulerpa taxifolia* infestations in nonnative areas is through release from aquariums. Once introduced, *C. taxifolia* spreads mainly by fragmentation, and even a small, broken off fragment can form a new plant. Distances between colonies can be great due to transport by vessels and fishing gear. Sexual reproduction is uncommon in *C. taxifolia*.

Morphology: *Caulerpa taxifolia* has a brilliant green color with leafy fern-like fronds that extend upward from each main stem.

Aquarium use: Due to its fast-growing, hardy nature and attractive appearance, *Caulerpa taxifolia* is used as a decorative marine aquarium plant. Its sale in the aquarium industry is still legal in California.

Native origin: *Caulerpa taxifolia* is native to tropical waters, with a distribution range from Florida throughout the Caribbean and in the Indo-Pacific.

Nonnative distribution: Mediterranean, Australia, and now Southern California.

Mediterranean infestation: *Caulerpa taxifolia* was identified in the Mediterranean Sea around 1984, most likely originating from an aquarium. Since its discovery, *C. taxifolia* infestations have spread along the Mediterranean coast and have dramatically altered and displaced native plant and animal communities. Eradication was not attempted early on in the Mediterranean, and governments are now unable to control its spread. More than 1360 hectares are affected. *C. taxifolia* infestations have negatively impacted tourism, local fishing and recreational activities including diving.

Australian infestation: *Caulerpa taxifolia* was recently reported near Sydney, Australia and is invading the area in a pattern similar to the Mediterranean infestation.

Southern California infestation: *Caulerpa taxifolia* was discovered on June 12, 2000 in Aqua Hedionda Lagoon, a coastal marine lagoon located in Carlsbad, California in San Diego County. Its growth and dispersal patterns were similar to those observed in the Mediterranean Sea, where the consequences have been devastating. In addition, an infestation of *C. taxifolia* has been identified more recently in a portion of Huntington Harbor, in Orange County. Results from genetic testing indicate that both the Huntington Harbor and Agua Hedionda strains can be considered to be nearly identical to the Mediterranean strain. In both Southern California locations, as well as in the Mediterranean, the most likely source of the *C. taxifolia* introductions was from an aquarium.

Eradication effort: The Southern California *Caulerpa* Action Team, SCCAT, is an action committee established to quickly and effectively respond to the discovery of *Caulerpa taxifolia* in Southern California. The group consists of representatives from several state, federal, local and private entities. The goal of SCCAT is to completely eradicate all *C. taxifolia* infestations. As part of the eradication effort, all of the patches of *C. taxifolia* at Agua Hedionda have been contained and undergone chlorine treatment, and similar efforts are underway at Huntington Harbor. Scientists are cautious, but hope that this aggressive eradication effort will be fully successful.

Prevention of new infestations: Do not disturb or attempt to collect any *Caulerpa taxifolia* found growing outside of an aquarium, since even a small fragment has the potential to regenerate into a new plant. Any suspected *C. taxifolia* that is found on fishing gear or watercraft should be removed, bagged, and reported. Aquarium tank water and its contents should never be emptied into or near any storm drain, creek, lagoon, bay or the ocean. Instead, aquarium water should only be dumped into a sink or toilet. An effective way to dispose of *C. taxifolia* from your aquarium is to put the seaweed in a bag, place it in your household freezer for at least 24 hours, and then dispose of it in trash destined for a landfill. Avoid purchasing, selling, or distributing any *Caulerpa taxifolia*.

Legislation: The sale and transport of the Mediterranean strain of *Caulerpa taxifolia* is prohibited under the federal Noxious Weed Act (1999). Its importation into the United States and interstate trade, including via the Internet, is a federal offense. While its possession and sale within California is still legal under federal law, efforts are underway to introduce more protective legislation.

Human health threat: There are no human health risks associated with *Caulerpa taxifolia*.

Contact information: Any sightings of *Caulerpa taxifolia* should be immediately reported to the San Diego Regional Water Quality Control Board at (858) 467-2952 or caulerpa@rb9.swrcb.ca.gov. For further information, please visit: http://swr.nmfs.noaa.gov/hcd/caulerpa.htm.